

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1 – 119. (Canceled)

120. (Previously Presented) The apparatus of claim 128, wherein said means for deriving a quantitative relationship comprises means for deriving a quantitative relationship in the form of $\hat{y}_i=f(x_{ij})$, where x_{ij} denotes said at least one parameter, i ranges from 1 to n where n represents the number of first culture media in the plurality thereof, j ranges from 1 to d where d represents the number of parameters, and \hat{y}_i represents an estimate of the measured indicia of the property of the plurality of first culture media.

121. (Previously Presented) The apparatus of claim 120, wherein said means for identifying a candidate library comprises means for determining from $\hat{y}_i=f(x_{ij})$, an estimated indicia of the property of a plurality of candidate culture media which each contains a respective test compound.

122. (Previously Presented) The apparatus of claim 128, wherein said means for deriving a quantitative relationship comprises:

means for determining a distance function $d(x_1, x_2)$ between a first value of a parameter, x_1 , of a first test compound and a second value of a parameter, x_2 , of a second test compound not within the plurality of first test compounds; and

means for estimating an indicia of the property of a culture medium containing the second test compound as the indicia of the property of the culture medium

containing the first test compound if $d(x_1, x_2) \leq d_{\text{cutoff}}$, where d_{cutoff} is a cutoff distance for the first test compound.

123. (Cancelled)

124. (Previously Presented) The computer program product of claim 129, wherein said step of deriving a quantitative relationship comprises deriving a quantitative relationship in the form of $\hat{y}_i = f(x_{ij})$, where x_{ij} denotes the at least one parameter, i ranges from 1 to n where n represents the number of first culture media in the plurality thereof, j ranges from 1 to d where d represents the number of parameters, and \hat{y}_i represents an estimate of the measured indicia of the property of the plurality of first culture media.

125. (Previously Presented) The computer program product of claim 124, wherein said step of identifying a candidate library further comprises determining from $\hat{y}_i = f(x_{ij})$, an estimated indicia of the property of a plurality of candidate culture media which each contains a respective test compound.

126. (Previously Presented) The computer program product of claim 125, wherein said step of deriving a quantitative relationship further comprises:

determining a distance function $d(x_1, x_2)$ between a first value of a parameter, x_1 , of a first test compound and a second value of a parameter, x_2 , of a second test compound not within the plurality of first test compounds; and

estimating indicia of the property of a culture medium containing the second test compound as the indicia of the property of the culture medium containing the

first test compound if $d(x_1, x_2) \leq d_{\text{cutoff}}$, where d_{cutoff} is a cutoff distance for the first test compound.

127. (Cancelled)

128. (Previously Presented) An apparatus for identifying a culture medium component, comprising:

means for identifying a predetermined set of test compounds;

means for parameterizing said predetermined set of test compounds by determining at least one parameter for each test compound in said predetermined set of test compounds;

means for performing a space-filling design of the parameterized predetermined set of test compounds to identify a plurality of first test compounds, wherein said plurality of first test compounds is a subset of said predetermined set of test compounds;

means for constructing a first test library containing a plurality of first culture media, each said first culture media containing a respective first test compound identified using said space-filling design;

means for deriving a quantitative relationship between a measured indicia of a property of said plurality of first culture media and at least one parameter of said plurality of first test compounds;

means for identifying a candidate library containing a plurality of candidate culture media having an estimated indicia that satisfies a test requirement, wherein each said candidate culture medium contains a respective test compound from said

predetermined set of test compounds that is not in said first test library, and wherein said estimated indicia is calculated using said derived quantitative relationship; and

means for identifying a second test library containing candidate culture media having a measured indicia that satisfies said test requirement.

129. (Previously Presented) A computer program product readable by a machine and tangibly embodying a program of instructions executable by the machine to perform the method steps of:

identifying a predetermined set of test compounds;

parameterizing the predetermined set of test compounds by determining at least one parameter for each test compound in the predetermined set of test compounds;

performing a space-filling design of the parameterized predetermined set of test compounds to identify a plurality of first test compounds, wherein the plurality of first test compounds is a subset of the predetermined set of test compounds;

constructing a first test library containing a plurality of first culture media, wherein each of the first culture media contains a respective first test compound;

deriving a quantitative relationship between a measured indicia of a property of the plurality of first culture media and at least one parameter of the plurality of first test compounds;

identifying a candidate library containing a plurality of candidate culture media having an estimated indicia that satisfies a test requirement, wherein each candidate culture medium contains a respective test compound from the predetermined set of

test compounds that is not in the first test library, and wherein the estimated indicia is calculated using the derived quantitative relationship; and

identifying a second test library containing candidate culture media having a measured indicia that satisfies the test requirement.